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UNIO PUNCTATUS.—Testâ lævi, ellipticâ, ad latere planulatâ, valdè inæquilaterali, posticè et anticè rotundatâ; valvulis crassis, anticè aliquantò crassioribus; natibus vix prominulis; epidermide olivaceâ; radiis punctatis undiquè indutis; dentibus cardinalibus parvis, compresso-conicis crenulatisque; lateralibus longis, crassis subcurvisque; margaritâ argenteâ et iridescente.

Hab.—Caney Fork, Tennessee, Dr. Edgar; and Tuscumbia, Alabama, B. Pybas.

UNIO AMABILIS.—Testâ lævi, triangulari, subinflatâ, inæquilaterali, posticè angulatâ, anticè rotundâ, valvulis crassiusculis, anticè crassioribus; natibus subprominentibus, ad apices undulatis; epidermide vel luteolâ vel fuscescente, obsoletè radiatâ; dentibus cardinalibus parvis, obliquis corrugatisque; lateralibus sublongis, obliquis corrugatisque; margaritâ vel albâ vel dilutè salmoniâ et valdè iridescente.

Hab.—Butler, Taylor Co., Georgia. H. M. Neisler.

UNIO LYONII.—Testâ lævi, subrotundâ, subcompressâ, inæquilaterali; valvulis subcrassis, anticè crassioribus; natibus prominentibus; epidermide rufo-fuscâ, latè radiatâ; dentibus cardinalibus subgrandibus, subcompressis corrugatisque; lateralibus crassis, obliquis subcurvisque; margaritâ dilutè salmoniâ et valdè iridescente.

Hab.—East Tennessee. Major S. S. Lyon, U. S. E.

UNIO PROPRIUS.—Testâ lævi, oblongâ, subinflatâ, inæquilaterali, posticè obtusè angulatâ, anticè rotundâ; valvulis subtenuibus, anticè crassioribus; natibus prominulis, ad apices undulatis; epidermide luteâ, eradiatâ; dentibus cardinalibus parvis, acuminatis, erectis, compressis; lateralibus sublongis subcurvisque; margaritâ vel purpureâ vel salmonis colore tinctâ et iridescente.

Hab.—Lafayette, Georgia. Rev. G. White.

UNIO CROMWELLII.—Testâ lævi, ellipticâ, subinflatâ, valdè inæquilaterali, posticè angulatâ, anticè rotundâ; valvulis subtenuibus, anticè crassiusculis; natibus subprominentibus, ad apices concentricis plicatis; epidermide minutè striatâ, fuscâ vel virenti, radiatâ; dentibus cardinalibus parvis, compressis, corrugatis, in utroque valvulis duplicibus; lateralibus sublongis subcurvisque; margaritâ purpurecente et valdè iridescente.

Hab.—Kiokee Creek, near Albany, Dougherty Co., Georgia. B. M. Cromwell, M. D.

UNIO MARGINIS.—Testâ ellipticâ, inflatâ, valdè inæquilaterali, posticè et anticè rotundatâ; valvulis crassiusculis, anticè crassioribus; natibus subprominentibus; epidermide striatâ, fuscâ, marginatâ, obsoletè radiatâ, dentibus cardinalibus parvisculis, valdè crenulatis; lateralibus subcurtis rectisque; margaritâ albâ et valdè iridescente.

Hab.—Blue Springs, Dougherty Co., Georgia. Bishop Elliott.

An Examination of the Birds of the genus *CHRYSOMITRIS*, in the Museum of the Academy of Natural Sciences of Philadelphia.

BY JOHN CASSIN.

Genus *CHRYSOMITRIS*, Boie.

(Genus *Chrysomitris*, Boie, *Isis*, 1828, p. 322.)

1. *Chrysomitris*.

1. *CHRYSOMITRIS SPINUS*, (Linnæus.)

Fringilla spinus, Linn., *Syst. Nat.*, i. p. 181, (1758.)

Pl. Enl. 485. Gould, *B. of Eur.*, pl. 197. Naum., *B. of Germ.*, pl. 125.

1865.]

Numerous specimens from Europe. Two specimens, male and female, seem to be smaller, and may be *C. pistacina*, Bonap., Consp. Av., i. p. 515. They are in adult plumage, and are quite identical with *C. spinus* in all characters except size, and a slightly greater elongation of the bill. Though evidently the preparations of one collector, these two specimens bear no reliable label indicating locality.

2. *CHRYSOMITRIS SPINESCENS*, Bonaparte.

Chrysomitris spinescens, Bonap., Consp. Av., i. p. 517, (1850.)

"*Fringilla spinescens*, Licht., Mus. Berol." Bonap. ut supra.

Several specimens, labelled South America. Of all of the birds of this group, this species is most nearly related to *C. spinus* of Europe, and in the greatest degree resembles it in colors. It is sufficiently described in *Conspetus Avium*, as above cited, and can be distinguished readily from any other species, though resembling in colors *C. Yarrellii*, (Aud.) The latter is smaller, with the bill larger, and having the yellow parts of the plumage clearer, or less tinged with green.

3. *CHRYSOMITRIS BARBATA*, (Molina.)

Fringilla barbata, Mol., Sagg. Stor. Nat. Chili, (1782), 2d ed., p. 209, (1810.)

Carduelis Stanleyi, Aud., Syn. B. of N. A., p. 118, (1839.)

Chrysomitris marginalis, Bonap., Consp. Av., i. p. 517, (1850.)

Chrysomitris campestris, Gay, Hist. Chili, (not of Spix, Av. Bras.)

Crithagra flavospectularis, Hartl. Naum., 1853, p. 213.

Aud., B. of Am., oct. ed., iii. pl. 185. Gilliss' *Astronom. Exp. Chili*, ii. pl. 17.

Specimens from Chili in the Academy Museum and in the National Museum; and, through the kindness of Professor Baird, I have also before me the original specimen of *C. Stanleyi*, Audubon, described and figured by that author as above. The last is either a young male or female, and has the general appearance of specimens collected and prepared by the late Dr. Townsend, several of which Audubon erroneously described as from California. A specimen of the same species, in much more mature plumage, is in the Academy Museum, from Dr. Townsend's collection, and is labelled in his handwriting, "Valpo. Chili, ♂, J. K. Townsend." The specimens from Chili in the Academy, and those of Townsend and Audubon, are quite identical, and entitled to all the names above specified.

The colors of this species are not fairly represented in Audubon's plate, above referred to, though sufficiently accurate for the recognition of the female, or of the male in imperfect plumage. The plate in Gilliss' Rept. is better, though the transverse band on the wing is unusually pale, and is generally yellow. The description by me in the same volume, (as cited above, p. 181,) is correct. Though having the black cap and black throat and general colors of the typical *C. spinus*, the bill in the present bird is much thicker, and the general organization more robust. The affinities of this species are, however, clearly in this group, but it is not so nearly related to *Carduelis spinoides*, Vigors, of India, as to be properly included in the same genus, which Dr. Cabanis considers probable (Mus. Hein., i. p. 161). That species, *C. spinoides*, is quite properly separated from *Chrysomitris* by that excellent and distinguished ornithologist, and is the type of his genus *Hypacanthis*, though in my opinion not fully entitled to generic distinction. Its relations are, I think, to the group *Chlorospiza*, Bonaparte, and especially to the species *C. kawariba*, *C. sinica*, and perhaps others.

Specimens of this species, from the collection made in Chili by Gilliss' Expedition, have the transverse band on the wing nearly white, as represented in the plate cited above. In all other respects they are identical with others in a collection made in Peru and Chili, and presented by the Hon. John Randolph Clay, late Minister of the United States to the former country. They

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are identical, also, as stated above, with the types of Audubon's *C. Stanleyi*, which were undoubtedly collected at Valparaiso, Chili, by Dr. Townsend.

4. *CHRYSOMITRIS PINUS*, (Wilson.)

Fringilla pinus, Wils. Am. Orn., ii. p. 133, (1810.)

Wils. Am. Orn., ii. pl. 17. Aud. B. of Am., pl. 180. Oct. ed., iii. pl. 180.

Numerous specimens from various localities in North America, but presenting no important differences. This species shows in colors but little similarity or near relationship with any other of this group. It is well known, and a favorite with collectors in the Middle States of this Republic, as one of the specialties of winter shooting, and is best known in its winter plumage. The summer plumage *ought* to differ materially, judging from the seasonal changes that take place in *C. tristis* and other species of this group. Specimens from Orizaba, Mexico, in the collection of the Smithsonian Institution, seem to be identical with others from the United States, and I fail to discover in any of them the characters of *C. macroptera*, Du Bus.

2. *Pyrrhomitris*.

5. *CHRYSOMITRIS CUCULLATA*, (Swainson.)

Carduelis cucullata, Swains., Zool. Ill., i. p. (not paged, 1820.)

Fringilla Cubæ, Gerv., Mag. Zool., 1835, p. (not paged.)

Swains. Zool. Ill., i. pl. 7. Mag. Zool., 1835, pl. 44.

Numerous specimens of both sexes, labelled "Trinidad," and, in one instance, "Cayenne;" and also one specimen in a collection made by Mr. Geo. Robbins, in Venezuela. The last, though in nearly mature plumage, is remarkable for having the transverse band on the wing dull yellow, instead of the usual pale red, and is the only instance of that description of variation that I have seen in this species.

3. *Melanomitris*.

6. *CHRYSOMITRIS ATRATA*, (D'Orbigny et Lafresnaye.)

Carduelis atrata, D'Orb. et Lafres., Mag. Zool., 1837, p. 83.

D'Orb., Voy. Am. Mer. Ois., pl. 48, fig. 2.

One specimen in adult plumage, from Verreaux, and another not mature, from D'Orbigny's collection. The former is almost precisely as given in the figure of D'Orbigny, as cited, but his description is different, and more like the present specimen from his collection, having the under parts from the breast mixed with pale yellow feathers. He says in his description in Voy. Amer. Mer. Ois., p. 364: "*subtus tota flava, gutture, collo, pectore hypochondriis-que fusco striatis.*" The description in Mag. Zool., as above cited, is different, and applies strictly to the adult bird.

7. *CHRYSOMITRIS UROPYGIALIS*, Sclater.

Chrysomitris uropygialis, Sclat., Cat. Am. B., p. 125, (1862.)

Easily distinguished from the preceding by its yellow rump, and by having the entire under parts of the body and under wing coverts yellow. Specimens from Gilliss' Exp. to Chili, now in the National Museum in charge of the Smithsonian Institution, were mistaken by me for the preceding, (*C. atratus*,) having at that time only the young specimen from D'Orbigny's collection, to which I above allude, and relying on it for my determination of the species.

8. *CHRYSOMITRIS BRYANTII*, nobis.

Resembling both of the preceding, but smaller, and with the entire upper parts, including the rump, clear lustrous black in the male, and with the head also black. Under parts of body, under wing coverts, and under tail 1865.]

coverts, yellow. Wing with a large transverse band of yellow, not including the first quill, and not extending longitudinally on the quills, but abruptly defined, (differing in that respect from both *C. atratus* and *C. uropygialis*.) Quills externally (in the male,) clear lustrous black, without paler margins, internally edged with pale yellow, forming a large spot of that color on the inferior surface of the wing. Sides of body mixed with black feathers. Tail black, all the feathers, except the two in the middle, with their bases yellow. Bill and feet bluish black, under mandible lighter at base.

Female. Entire upper parts, including the head above, dark green, under parts greenish yellow, middle of abdomen and under tail coverts yellowish white. Wing brownish black, with a large transverse band of yellow, restricted, as in the male; tail brownish black, yellow at base.

Total length $4\frac{1}{4}$ to $4\frac{1}{2}$ inches, wing $2\frac{1}{2}$ to $2\frac{3}{4}$, tail $1\frac{1}{2}$ to $1\frac{3}{4}$ inches, "extent of wings $6\frac{1}{2}$ inches."

Hab. Dota, Costa Rica. Discovered by Mr. Julian Carmiol. Spec. in Museum of the Smithsonian Institution.

This handsome little species is allied to *C. atrata* and *C. uropygialis*, and of the same general colors, but is much smaller than either, being little larger than *C. mexicana* and *C. columbiana*. It is easily distinguished by having the entire head and upper parts uniform lustrous black, and the under parts yellow. The large yellow spots on the wings are restricted, and do not extend longitudinally along the primary quills, as in the preceding and other species.

This interesting little bird is dedicated to my friend Henry Bryant, M. D., of Boston, Mass., as a slight token of my respect for his many accomplishments as a gentleman and naturalist, and in pleasant remembrance of years of uninterrupted friendship.

4. *Sporagra*.

9. *CHRYSOMITRIS MAGELLANICA*, (Vieillot.)

Fringilla magellanica, Vieill., Nouv. Dict., xii. p. 168, (1817.)

Fringilla icterica, Licht. Verz., p. 26, (1823.)

Fringilla campestris, Spix, Av. Bras., ii. p. 48, (1825.)

Vieill., Ois. Chant., pl. 30. Aud., B. of Am., pl. 394. Oct. ed., iii. pl. 182.

Numerous specimens from South America, in which there is not so much uniformity of specific characters as is desirable, though I find myself unable to trace sufficient regularity for distinction or separation. In specimens from Southern Brazil the black of the head seems to be more restricted, and extends but slightly on the neck in front, and the light edgings of the quills and wing coverts are nearly obsolete. This appears to be the species figured by Audubon as above, and stated by him to have been obtained in Kentucky.

10. *CHRYSOMITRIS NOTATA*, (Du Bus.)

Carduelis notata, Du Bus., Bull. Acad. Bruss., 1847, p. 106.

Numerous specimens from Mexico. Resembling the preceding, (*C. magellanica*), but easily distinguished by its deep black wings, without paler edgings, though the extension of the black of the head on the neck in front is by no means a special nor reliable character of this species. Specimens in the collection of the Smithsonian Institution are from Mirador and Orizaba, Mexico, and from Guatemala.

5. *Astragalinus*.

11. *CHRYSOMITRIS TRISTIS*, (Linnaeus.)

Fringilla tristis, Linn., Syst. Nat., i. p. 181, (1758.)

Fringilla Taria, Müll., Syst. Nat., Supp., p. 163, (1776.)

Carduelis americana, Rich and Sw., Faun. Bor. Am., ii. p. 268, (1831.)

Wils., Am. Orn., i. pl. 1. Aud., B. of Am., pl. 33. Oct. ed., iii. pl. 181. Buff., Pl. Enl., 292.

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Numerous specimens, all of which are from North America.

12. *CHRYSOMITRIS YARRELLII*, (Audubon.)

Carduelis Yarrelli, Aud., Syn. B. of N. A., p. 117, (1839.)

Aud., B. of Am., pl. 433, fig. 4, 5. Oct. ed., iii. pl. 184.

Three specimens, apparently adult male and female and young male, all of which have been labelled in Europe, "Orenoque." Through the kindness of Prof. Baird, I have also before me the original specimen of Audubon, which seems to be entirely identical with the former, except that the quills are edged externally with greenish yellow. This bird is accurately figured by Audubon, as above cited, and is a strongly marked species, though apparently not known to ornithologists. At present I know of no other name for it, though it may have been given in another genus, on account of its thick and strong bill. Audubon's specimen bears no indication of locality, though stated by him to have been from California, which I regard as probably erroneous.

13. *CHRYSOMITRIS LAWRENCEI*, (Cassin.)

Carduelis Lawrencei, Cass., Proc. Acad., Philada., v. p. 105, (1850.)

Pr. Acad., Philada., v. pl. 5.

Now well known as a bird of the western countries of North America, though apparently not found abundantly by collectors. This curious little bird does not intimately resemble any other in its colors or general specific characters.

6. *Pseudomitris*.

14. *CHRYSOMITRIS PSALTRIA*, (Say.)

Fringilla psaltria, Say, Long's Exp., ii. p. 40, (1823.)

Bonap., Am. Orn., i. pl. 6. Aud., B. of Am., pl. 394. Oct. ed., iii. pl. 183.

Specimens from California. Apparently an abundant species in the western countries of North America; carefully figured by Bonaparte, as above cited, and sufficiently so for recognition by Audubon. The assignment of this species and the two immediately succeeding to this genus, I regard as probably erroneous.

15. *CHRYSOMITRIS MEXICANA*, (Swainson.)

Carduelis mexicana, Sw., Phil. Mag., 1827, p. 435.

Fringilla melanocephala, Wagl., Isis, 1831, p. 525.

Fringilla texensis, Giraud, B. of Tex., p. 21, (1841.)

Chrysomitris nana, Bonap., Consp. Av., i. p. 516, (1850.)?

Baird, U. S. and Mex. Bound. Rept., pl. 16. B. of N. A., pl. 54. Giraud, B. of Tex., pl. 5.

From Mexico and Lower California. One specimen, labelled "Valparaiso," in the hand-writing of M. Victor Massena. Distinguishable from the next species (*C. columbiana*,) only by several of the outer tail feathers being white, — a character liable to some variation, several specimens which I assign to this species having only a trace of white, and, in fact, with this character so little developed as to present a difficulty somewhat in specific distinction.

Specimens of this little bird in the museum of the Smithsonian Institution are from Texas and New Mexico, and have also been received from Costa Rica, in the interesting collections of Mr. Julian Carmiol.

16. *CHRYSOMITRIS COLUMBIANA*, Lafresnaye.

Chrysomitris columbiana, Lafres., Rev. Zool., 1843, p. 292.

Specimens labelled "Bogota" and "Ameriq. Merid." Singularly like the preceding, but with the tail entirely black.

1865.]

The three last species, here given as *C. psaltria*, *C. mexicana*, and *C. columbiana*, and so given also generally by modern authors, I regard as very probably not belonging to this genus. In my opinion these little birds are more nearly related to the group given by Dr. Selater as *Cyanospizinae*, and possibly are entitled to generic distinction.

June 6th.

MR. CASSIN, Vice-President, in the Chair.

Twenty-one members present.

The following papers were presented for publication :

"Descriptions of new species of Fossils from the Marshall Group of Michigan, &c." By Alexander Winchell.

"Descriptions of new species of Eocene Tertiary Fossils." By R. P. Whitfield.

Dr. Leidy exhibited some bones and teeth of Horses from California and Oregon, recently submitted to his examination by Prof. J. D. Whitney. He stated that fossil remains of Horses had been found throughout the length and breadth of the North American continent. They had been obtained from the frozen cliffs of Eschscholtz Bay, in Arctic America, and from Honduras in Central America; from New Jersey, Pennsylvania, Maryland, Virginia, North and South Carolina, Georgia, Kentucky, Mississippi, Louisiana, Missouri, Nebraska and Texas. Many of the remains are undistinguishable in anatomical character from corresponding bones and teeth of the domestic horse; others are comparatively large, though not larger than in the largest variety of the latter, but their molar teeth exhibit a more complex folding of the enamel than is seen in the domestic horse. Dr. L. considers it probable that the fossils represent several extinct species, all differing from the living horse, though this was not a matter of demonstration.

Most of the remains from California, among them an entire skull, are unchanged in appearance, and are undistinguishable from corresponding parts of the Mustang, or recent Indian Horse of the West, though taken from auriferous gravel a considerable depth from the surface.

Among the California specimens are several molar teeth having more the general appearance of true fossils than the others, though they are also but slightly changed. Two of them are second upper molars from different individuals, of more robust proportions than any of the recent looking specimens, and equal in this respect to the corresponding teeth found anywhere. One of the teeth was taken from auriferous clay at a depth of thirty feet below the surface, in Tuolumne County, and is slightly infiltrated with oxide of iron. The other was obtained from a bed of asphaltum, in company with a last lower molar, near Beuna Vista Lake, and is impregnated with bitumen. These two upper molars, strongly resembling each other, differ from the more recent looking specimens, and from the corresponding teeth of the domestic horse, in the remarkable degree of simplicity of the enamel folding, as seen on the triturating surfaces. They differ in another circumstance, which is perhaps accidental, or at least was dependent on the peculiar character of the food, that is to say, the triturating surface, in both specimens, is remarkably flat, whereas, in the horse ordinarily it is worn into two transverse hills. Dr. L. was disposed to view these teeth as representing a species different from any heretofore indicated, and proposed for it the name of *Equus occidentalis*. The measurement of the specimens are as follows: Antero-posterior diameter of triturating surface $14\frac{3}{4}$ lines, $15\frac{1}{4}$ lines; transverse diameter of do. $12\frac{1}{2}$ lines, $13\frac{1}{2}$ lines.

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